



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI  
GOVERNOR

DAVID P. LITTELL  
COMMISSIONER

May 29, 2006

Mr. Terrence St. Peter  
City Manager  
City of Belfast  
131 Church Street  
Belfast, Maine 04915

**RE: *Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0101532  
Maine Waste Discharge License (WDL) Application #W000569-5L-F-R  
Final Permit/License***

Dear Mr. St. Peter:

Enclosed, please find a copy of your **final** MEPDES permit and Maine WDL which was approved by the Department of Environmental Protection. Please read the permit/license and its attached conditions carefully. You must follow the conditions in the order to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State law and is subject to enforcement action.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "Appealing a Commissioner's Licensing Decision."

If you have any questions regarding the matter, please feel free to call me at 287-7659.

Sincerely,

Bill Hinkel  
Division of Water Quality Management  
Bureau of Land and Water Quality

Enc.

pc: Mr. Jonathan Carman, Contract Operator J.M.C. Wastewater Services P.O. Box 397Unity, ME 04988  
Denise Behr, DEP  
Sandy Lao, USEPA

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688 FAX: (207) 287-7826  
RAY BLDG., HOSPITAL ST.

BANGOR  
106 HOGAN ROAD  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769-2094  
(207) 764-0477 FAX: (207) 760-3143





STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
STATE HOUSE STATION 17      AUGUSTA, MAINE 04333

DEPARTMENT ORDER

**IN THE MATTER OF**

CITY OF BELFAST	) MAINE POLLUTANT DISCHARGE
BELFAST, WALDO COUNTY, MAINE	) ELIMINATION SYSTEM PERMIT
PUBLICLY OWNED TREATMENT WORKS	)                    AND
#ME0101532	) WASTE DISCHARGE LICENSE
#W000569-5L-F-R <b>APPROVAL</b>	) <b>RENEWAL</b>

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, Section 1251, *et seq.* and Maine law, 38 M.R.S.A., Section 414-A *et seq.*, and applicable regulations, the Department of Environmental Protection (Department) has considered the application of the CITY OF BELFAST (City), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

**APPLICATION SUMMARY**

The City has applied to the Department for renewal of Department Waste Discharge License (WDL) #W000569-5L-C-R / Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0101532, which was issued on June 19, 2001, and two administrative modifications (issued on June 28, 2001 and June 11, 2004). The 6/19/01 MEPDES permit and subsequent administrative modifications authorized the City to discharge a monthly average flow of up to 0.90 million gallons per day (MGD) of secondary treated sanitary wastewater from a publicly owned treatment works (POTW) and an unspecified quantity of untreated excess combined sanitary and storm water wastewater from two combined sewer overflow (CSO) points to the Atlantic Ocean at Belfast Harbor, Class SB, in Belfast, Maine. The 6/19/01 permit is scheduled to expire on June 19, 2006.

## PERMIT SUMMARY

**This permitting action is similar to the 6/19/01 permitting action and two administrative modifications thereof in that it is:**

1. Carrying forward the daily maximum discharge flow reporting requirement;
2. Carrying forward the monthly average, weekly average and daily maximum concentration limits for biochemical oxygen demand (BOD<sub>5</sub>) and total suspended solids (TSS);
3. Carrying forward the monthly average and weekly average technology-based mass limits for BOD<sub>5</sub> and TSS;
4. Carrying forward the daily maximum BOD<sub>5</sub> and TSS mass reporting requirements;
5. Carrying forward the requirement for a minimum of 85% removal of BOD<sub>5</sub> and TSS;
6. Carrying forward the daily maximum technology-based concentration limit for settleable solids;
7. Carrying forward the seasonal monthly average and daily maximum concentration limits for fecal coliform bacteria;
8. Carrying forward the technology-based monthly average concentration limit for total residual chlorine (TRC);
9. Carrying forward the pH range limit of 6.0 to 9.0 standard units (SU);
10. Carrying forward authorization to discharge an unspecified quantity of excess combined sanitary wastewater and storm water during wet weather events via two combined sewer overflow (CSO) points; and
11. Carrying forward the minimum monitoring frequency requirements for all monitored parameters.

**PERMIT SUMMARY (cont'd)**

**This permitting action is different from the 6/19/01 permitting action and two administrative modifications thereof in that it is**

1. Eliminating the numeric monthly average discharge flow limitation of 0.9 MGD and establishing a monthly average discharge flow report only requirement;
2. Revising the daily maximum water quality-based concentration limit from 0.25 mg/L to 0.23 mg/L;
3. Revising whole effluent toxicity (WET) and priority pollutant testing requirements and test organisms based on revised "toxics" rule, Chapter 530;
4. Eliminating the acute limit of 5.3% for the mysid shrimp based on results of facility testing;
5. Establishing analytical chemistry testing pursuant to revised "toxics" rule Chapter 530;
6. Revising the daily maximum, water quality-based concentration and mass limits for total copper based on a revised ambient water quality criteria;
7. Establishing Special Condition I, *Chapter 530(2)(D)(4) Statement for Reduced Toxics Testing* for reduced WET and analytical chemistry testing;
8. Revising authorization to accept and introduce into the treatment works septage from a daily maximum of up to 2,000 gallons per day (GPD) and a monthly maximum of 30,000 GPD to daily maximum and monthly maximum limits of 7,000 GPD and 56,000 GPD, respectively; and
9. Eliminating the annual reporting requirements for septage and other high strength wastes added to the treatment process (previous Special Condition N).

## CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated May 19, 2006, and subject to the Conditions listed below, the Department makes the following conclusions:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.
2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.
3. The provisions of the State's antidegradation policy, 38 M.R.S.A. §464(4)(F), will be met, in that:
  - (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;
  - (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;
  - (c) The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;
  - (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification that higher water quality will be maintained and protected; and
  - (e) Where a discharge will result in lowering the existing water quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.
4. The discharge (including the two CSO points) will be subject to effluent limitations that require application of best practicable treatment as defined in Maine law, 38 M.R.S.A., §414-A(1)(D).

**ACTION**

THEREFORE, the Department APPROVES the above noted application of the CITY OF BELFAST to discharge secondary treated sanitary wastewater and an unspecified quantity of untreated excess combined sanitary and storm water from two (2) combined sewer overflow (CSO) points during wet weather events to the Atlantic Ocean at Belfast Harbor, Class SB, in Belfast, Maine, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations including:

1. "Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits," revised July 1, 2002, copy attached.
2. The attached Special Conditions, including any effluent limitations and monitoring requirements.
3. The expiration date of this permit is five (5) years from the date of signature below.

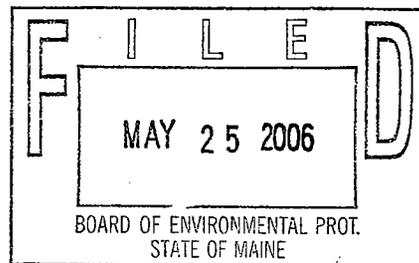
DONE AND DATED AT AUGUSTA, MAINE, THIS 23<sup>RD</sup> DAY OF May, 2006.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:   
DAVID P. LITTELL, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: March 13, 2006  
Date of application acceptance: March 15, 2006



Date filed with Board of Environmental Protection: \_\_\_\_\_

This Order prepared by William F. Hinkel, BUREAU OF LAND & WATER QUALITY  
#ME0101532 / #W000569-5L-F-R                      May 19, 2006

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

- The permittee is authorized to discharge secondary treated sanitary wastewater from Outfall #001A to the Atlantic Ocean at Belfast Harbor. Such discharges shall be limited and monitored by the permittee as specified below<sup>(1)</sup>:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements			
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow [50050]	as specified Report MGD <sup>(2)</sup> [03]	---	as specified Report MGD [03]	---	---	---	as specified Continuous [99/99]	as specified Recorder [RC]
BOD <sub>5</sub> [00310]	175 lbs./day [26]	263 lbs./day [26]	Report lbs./day [26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	2/Week [02/07]	24-Hour Composite [24]
BOD <sub>5</sub> Percent Removal <sup>(3)</sup> [81010]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
TSS [00530]	175 lbs./day [26]	263 lbs./day [26]	Report lbs./day [26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	2/Week [02/07]	24-Hour Composite [24]
TSS Percent Removal <sup>(3)</sup> [81011]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
Settleable Solids [00545]	---	---	---	---	---	0.3 ml/L [25]	1/Day [01/01]	Grab [GR]
Fecal Coliform Bacteria <sup>(4)</sup> [31616]	---	---	---	15/100 ml <sup>(5)</sup> [13]	---	50/100 ml [13]	2/Week [02/07]	Grab [GR]
Total Residual Chlorine <sup>(6)</sup> [50060]	---	---	---	0.1 mg/L [19]	---	0.23 mg/L [19]	1/Day [01/01]	Grab [GR]
pH [00400]	---	---	---	---	---	6.0 - 9.0 SU [12]	1/Day [01/01]	Grab [GR]
Copper (Total) [01042]	---	---	0.59 lbs./day [26]	---	---	117 µg/L [28]	2/Year [02/YR]	24-Hour Composite [24]

The italicized numeric values bracketed in the table and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports.

**FOOTNOTES:** See Pages 9 through 13 of this permit for applicable footnotes.

PERMIT

#ME0101532  
 #W000569-5L-F-R

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

2. **SURVEILLANCE LEVEL TESTING.** During the period beginning the effective date of this permit and lasting through 12 months prior to permit expiration for Outfall #001A, the permittee shall perform **WHOLE EFFLUENT TOXICITY (WET)** and **ANALYTICAL CHEMISTRY** as follows:

<b>WHOLE EFFLUENT TOXICITY (WET) <sup>(7)</sup></b>	<b>Daily Maximum</b>	<b>Minimum Frequency</b>	<b>Sample Type</b>
<u>Acute No Observed Effect Level (A-NOEL)</u> Invertebrate-Mysid Shrimp ( <i>Mysidopsis bahia</i> ) [TDA3E]	Report % [23]	1/2 Years [01/2Y]	24-Hour Composite [24]
<u>Chronic No Observed Effect Level (C-NOEL)</u> Invertebrate-Sea Urchin ( <i>Arbacia punctulata</i> ) [TBH3A]	Report % [23]	1/2 Years [01/2Y]	24-Hour Composite [24]
<b>ANALYTICAL CHEMISTRY<sup>(8)</sup></b> [51168]	Report µg/L [28]	1/2 Years [01/2Y]	24-Hour Composite/Grab [24/GR]
<b>PRIORITY POLLUTANT<sup>(9)</sup></b> [50008]	---	---	---

The italicized numeric values bracketed in the table and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports.

**FOOTNOTES:** See Pages 9 through 13 of this permit for applicable footnotes.

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

- SCREENING LEVEL TESTING.** During the period beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter for **Outfall #001A**, the permittee shall perform **WHOLE EFFLUENT TOXICITY (WET)**, **PRIORITY POLLUTANT**, and **ANALYTICAL CHEMISTRY TESTING** as follows:

<b>WHOLE EFFLUENT TOXICITY (WET) <sup>(7)</sup></b>	<b>Daily Maximum</b>	<b>Minimum Frequency</b>	<b>Sample Type</b>
<u>Acute No Observed Effect Level (A-NOEL)</u> Invertebrate-Mysid Shrimp ( <i>Mysidopsis bahia</i> ) [TDA3E]	Report % [23]	2/Year [02/YR]	24-Hour Composite [24]
<u>Chronic No Observed Effect Level (C-NOEL)</u> Invertebrate-Sea Urchin ( <i>Arbacia punctulata</i> ) [TBH3A]	Report % [23]	2/Year [02/YR]	24-Hour Composite [24]
<b>ANALYTICAL CHEMISTRY<sup>(8)</sup></b> [51168]	Report µg/L [28]	1/Quarter [01/90]	24-Hour Composite/Grab [24/GR]
<b>PRIORITY POLLUTANT<sup>(9)</sup></b> [50008]	Report µg/L [28]	1/Year [01/YR]	24-Hour Composite/Grab [24/GR]

The italicized numeric values bracketed in the table and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports.

**FOOTNOTES:** See Pages 9 through 13 of this permit for applicable footnotes.

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

#### FOOTNOTES:

1. **Monitoring** – All effluent monitoring shall be conducted at a location following the last treatment unit in the treatment process as to be representative of end-of-pipe effluent characteristics. Sampling and analysis must be conducted in accordance with: a) methods approved by 40 Code of Federal Regulations (CFR) Part 136; b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136; or c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Health and Human Services.
2. **Monthly Average Discharge Flow** – The average daily dry weather design capacity of the treatment facility is 0.7 MGD. During extended wet weather events (several weeks or months), the City has historically exceeded the monthly average dry weather flow limitation in order to maximize use of the secondary treatment processes. Therefore, the Department is changing the monthly average limit to a reporting requirement to encourage the facility to maximize use of the secondary treatment processes. Regulating the discharge in this manner in no way shall be construed to represent any change to design loading criteria of the waste water treatment facility. Biochemical oxygen demand (BOD<sub>5</sub>) and total suspended solids (TSS) mass limitations shall be based on the actual design capacity of 0.7 MGD.
3. **Percent Removal** – The treatment facility shall maintain a minimum of 85 percent removal of BOD<sub>5</sub> and TSS for all flows receiving secondary treatment. The percent removal shall be calculated based on influent and effluent concentration values. The percent removal shall be waived when the monthly average influent concentration is less than 200 mg/L. For instances when this occurs, the facility shall report "NODI-9" on the monthly Discharge Monitoring Report.
4. **Bacteria Limits** – Fecal coliform bacteria limits and monitoring requirements are seasonal and apply between May 15 and September 30 of each year. The Department reserves the right to require year-round disinfection to protect the health, safety and welfare of the public.
5. **Bacteria Reporting** – The monthly average fecal coliform bacteria limitation is a geometric mean limitation and sample results shall be reported as such.

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

#### FOOTNOTES:

6. **TRC Monitoring** – Monitoring for TRC is only required when elemental chlorine or chlorine-based compounds are in use for effluent disinfection. TRC shall be tested using Amperometric Titration or the DPD Spectrophotometric Method. The USEPA approved methods are found in Standard Methods for the Examination of Water and Waste Water, (Most current edition), Method 4500-CL-E and Method 4500-CL-G or USEPA Manual of Methods of Analysis of Water and Wastes. For the purposes of Discharge Monitoring Report (DMR) reporting when a facility has not disinfected with chlorine-based compounds during a reporting period, enter “**NODI-9**” indicating “**monitoring not required this monitoring period.**”
7. **Whole Effluent Toxicity (WET) Testing** – Definitive WET testing is a multi-concentration testing event (a minimum of five dilutions bracketing the critical acute and chronic thresholds of 5.6% and 2.9% respectively), which provides a point estimate of toxicity in terms of No Observed Effect Level, commonly referred to as NOEL or NOEC. A-NOEL is defined as the acute no observed effect level with survival as the end point. C-NOEL is defined as the chronic no observed effect level with survival, reproduction and growth as the end points. The critical acute and chronic thresholds were derived as the mathematical inverse of the applicable acute and chronic dilution factors of 17.7:1 and 33.9:1, respectively.

**SURVEILLANCE LEVEL TESTING: Beginning upon issuance of this permit and lasting through 12 months prior to permit expiration**, the permittee shall conduct **surveillance level WET testing** at a minimum frequency of once every two years. Acute tests shall be conducted on the mysid shrimp (*Mysidopsis bahia*); chronic tests shall be conducted on the sea urchin (*Arbacia punctulata*).

**SCREENING LEVEL TESTING: Beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter**, the permittee shall conduct **screening level WET testing** at a minimum frequency of twice per year.

The permittee shall coordinate surveillance and screening level testing such that upon completion of screening level testing, test results are available for each of the four calendar quarters. Screening level tests shall be spaced a minimum of 6 months apart.

Test results must be submitted to the Department not later than the next Discharge Monitoring Report (DMR) required by the permit, provided, however, that the permittee may review the toxicity reports for up to 10 business days of their availability before submitting them. The permittee shall evaluate test results being submitted and identify to the Department possible exceedences of the critical acute and chronic water quality thresholds of 5.6% and 2.9%, respectively.

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

#### FOOTNOTES:

Results of WET tests shall be reported on the "Whole Effluent Toxicity Report – Marine Waters" form included as Attachment A of this permit each time a WET test is performed. The permittee is required to analyze the effluent for the parameters specified on the "WET and Analytical Chemistry Results – Marine Waters" form included as Attachment B of this permit each time a WET test is performed.

For the purposes of DMR reporting, enter a "1" for yes, testing done this monitoring period or "NODI-9" monitoring not required this period.

Toxicity tests must be conducted by an experienced laboratory approved by the Department. The laboratory must follow procedures as described in the following USEPA methods manuals.

- a. U.S. Environmental Protection Agency. 2002. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 5<sup>th</sup> ed. EPA 821-R-02-012. U.S. Environmental Protection Agency, Office of Water, Washington, D.C., October 2002 (the acute method manual).
  - b. U.S. Environmental Protection Agency. 2002. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, 3<sup>rd</sup> ed. EPA 821-R-02-014. U.S. Environmental Protection Agency, Office of Water, Washington, D.C., October 2002 (the marine chronic method manual).
7. **Analytical Chemistry** – Pursuant to Department rule 06-096 CMR Chapter 530 Section 2.C.4, analytical chemistry refers to a suite of chemical tests that include ammonia nitrogen (as N), total aluminum, total arsenic, total cadmium, total chromium, total copper, total cyanide, total lead, total nickel, total silver, total zinc and total residual chlorine.

Analytical chemistry testing shall be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve minimum reporting levels of detection as specified by the Department on the form entitled, "WET and Chemical-Specific Data Report Form" included as Attachment C of this permit.

**SURVEILLANCE LEVEL TESTING:** Beginning upon issuance of this permit and lasting through 12 months prior to permit expiration, the permittee shall conduct surveillance level analytical chemistry testing at a minimum frequency of one test every two years. Surveillance tests shall be conducted in a different calendar quarter than the previous test.

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

#### FOOTNOTES:

**SCREENING LEVEL TESTING: Beginning 12 months prior to the expiration of this permit and lasting through permit expiration and every five years thereafter,** the permittee shall conduct **screening level analytical chemistry testing** at a minimum frequency of four times per year (4/Year) in successive calendar quarters.

For the purposes of DMR reporting, enter a "1" for yes, testing done this monitoring period or "NODI-9" monitoring not required this period.

8. **Priority Pollutant Testing** – Priority pollutant testing refers to analysis for levels of priority pollutants listed in Department rule 06-096 CMR Chapter 525 Section 4.VI.

Surveillance level priority pollutant testing is not required pursuant to Department rule 06-096 CMR Chapter 530 Section 2.D.

**SCREENING LEVEL TESTING: Beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter,** the permittee shall conduct **screening level priority pollutant testing** at a minimum frequency of once per year (1/Year).

Priority pollutant and analytical chemistry testing shall be conducted on samples collected at the same time as those collected for whole effluent toxicity tests, when practicable. Priority pollutant and analytical chemistry testing shall be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve minimum reporting levels of detection as specified by the Department on the form entitled, "Maine Department of Environmental Protection WET and Chemical-Specific Data Report Form" included as Attachment C of this permit.

Priority pollutant and analytical chemistry test results must be submitted to the Department not later than the next Discharge Monitoring Report (DMR) required by the permit, provided, however, that the permittee may review the toxicity reports for up to 10 business days of their availability before submitting them. The permittee shall evaluate test results being submitted and identify to the Department, possible exceedences of the acute, chronic or human health water quality criteria as established in Department rule, 06-096 CMR, Chapter 584.

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

#### FOOTNOTES:

For the purposes of DMR reporting, enter a "1" for yes, testing done this monitoring period or "NODI-9" monitoring not required this period.

All mercury sampling required by this permit or required to determine compliance with interim limitations established pursuant to Department rule Chapter 519, shall be conducted in accordance with EPA's "clean sampling techniques" found in EPA Method 1669, Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels. All mercury analysis shall be conducted in accordance with EPA Method 1631, Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry.

### B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the usages designated by the classification of the receiving waters.
2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated by the classification of the receiving waters.
3. The discharge shall not impart color, taste, turbidity, toxicity, radioactivity or other properties which cause those waters to be unsafe for the designated uses and characteristics ascribed to their classification.
4. Notwithstanding specific conditions of this permit, the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

### C. DISINFECTION

If chlorination is used as the means of disinfection, an approved chlorine contact tank providing the proper detention time consistent with good engineering practice must be utilized followed by a dechlorination system if the imposed total residual chlorine (TRC) limit cannot be achieved by dissipation in the detention tank. The total residual chlorine in the effluent shall at no time cause any demonstrable harm to aquatic life in the receiving waters. The dose of chlorine applied shall provide a TRC concentration that will effectively reduce fecal coliform bacteria levels to or below those specified in Special Condition A, *Effluent Limitation and Monitoring Requirements*, above.

## SPECIAL CONDITIONS

### D. TREATMENT PLANT OPERATOR

The treatment facility must be operated by a person holding a minimum of a **Grade III** certificate (or Registered Maine Professional Engineer) pursuant to Title 32 M.R.S.A. §4171 *et seq.* All proposed contracts for facility operation by any person must be approved by the Department before the permittee may engage the services of the contract operator.

### E. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from Outfall #001A (secondary treated wastewater) and the two (2) combined sewer overflow outfalls (Outfall #002 and #003) listed in Special Condition M, *Combined Sewer Overflows*, of this permit. Discharges of wastewater from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5), Bypasses, of this permit.

### F. LIMITATIONS FOR INDUSTRIAL USERS

Pollutants introduced into the waste water collection and treatment system by a non-domestic source (user) shall not pass through or interfere with the operation of the treatment system.

### G. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and **postmarked on or before the thirteenth (13<sup>th</sup>) day of the month or hand-delivered to the Department's Regional Office such that the DMR's are received by the Department on or before the fifteenth (15<sup>th</sup>) day of the month** following the completed reporting period. A signed copy of the DMR and all other reports required herein shall be submitted to the Department assigned inspector (unless otherwise specified by the Department) at the following address:

Department of Environmental Protection  
Bureau of Land and Water Quality  
Division of Water Quality Management  
17 State House Station  
Augusta, Maine 04333-0017

## SPECIAL CONDITIONS

### H. NOTIFICATION REQUIREMENTS

In accordance with Standard Condition D, the permittee shall notify the Department of the following:

1. Any introduction of pollutants into the waste water collection and treatment system from an indirect discharger in a primary industrial category discharging process waste water; and
2. Any substantial change in the volume or character of pollutants being introduced into the waste water collection and treatment system by a source introducing pollutants to the system at the time of permit issuance.
3. For the purposes of this section, adequate notice shall include information on:
  - a. The quality and quantity of waste water introduced to the waste water collection and treatment system; and
  - b. Any anticipated impact of the change in the quantity or quality of the waste water to be discharged from the treatment system.

### I. CHAPTER 530(2)(D)(4) STATEMENT FOR REDUCED TOXICS TESTING

On or before December 31<sup>st</sup> of each year of the effective term of this permit [*PCS Code 95799*], the permittee shall provide the Department with statements describing the following:

- (a) Changes in the number or types of non-domestic wastes contributed directly or indirectly to the wastewater treatment works that may increase the toxicity of the discharge;
- (b) Changes in the operation of the treatment works that may increase the toxicity of the discharge; and
- (c) Changes in industrial manufacturing processes contributing wastewater to the treatment works that may increase the toxicity of the discharge.

Further, the Department may require that annual WET, analytical chemistry, and priority pollutant testing be re-instituted if it determines that there have been changes in the character of the discharge or if annual certifications described above are not submitted.

## SPECIAL CONDITIONS

### J. OPERATIONS AND MAINTENANCE (O&M) PLAN

This facility shall have a current written comprehensive Operation & Maintenance (O&M) Plan. The plan shall provide a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

**By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades,** the permittee shall evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the waste water treatment facility to ensure that it is up-to-date. The O&M Plan shall be kept on-site at all times and made available to Department and EPA personnel upon request.

**Within 90 days of completion of new and or substantial upgrades of the waste water treatment facility,** the permittee shall submit the updated O&M Plan to their Department inspector for review and comment.

### K. WET WEATHER MANAGEMENT PLAN

The treatment facility staff shall maintain a Wet Weather Management Plan to direct the staff on how to operate the facility effectively during periods of high flow. The Department acknowledges that the existing collection system may deliver flows in excess of the monthly average design capacity of the treatment plant during periods of high infiltration and rainfall. A specific objective of the plan shall be to maximize the volume of wastewater receiving secondary treatment under all operating conditions. The revised plan shall include operating procedures for a range of intensities, address solids handling procedures (including septic waste and other high strength wastes if applicable) and provide written operating and maintenance procedures during the events.

**Once the Wet Weather Management Plan has been approved, the permittee shall review their plan at least annually and record any necessary changes to keep the plan up to date.** The Department may require review and update of the plan as it is determined to be necessary.

## SPECIAL CONDITIONS

### L. DISPOSAL OF SEPTAGE WASTE IN WASTEWATER TREATMENT FACILITY

During the effective period of this permit, the permittee is authorized to receive and introduce into the treatment process or solids handling stream a **daily maximum of 7,000 gallons per day** and a **monthly total of 56,000 gallons** of septage, subject to the following terms and conditions:

1. This approval is limited to methods and plans described in the application and supporting documents. Any variations are subject to review and approval prior to implementation.
2. At no time shall addition of septage cause or contribute to effluent quality violations. If such conditions do exist, the introduction of septage into the treatment process or solids handling stream shall be suspended until effluent quality can be maintained.
3. The permittee shall maintain records which shall include, as a minimum, the following by date: volume of septage received, source of the septage (name of municipality), the hauler transporting the septage, the dates and volume of septage added to the waste water treatment influent and test results.
4. Addition of septage into the treatment process or solids handling stream shall not cause the treatment facilities design capacity to be exceeded. If, for any reason, the treatment process or solids handling facilities become overloaded, introduction of septage into the treatment process or solids handling stream shall be reduced or terminated in order to eliminate the overload condition.
5. Septage known to be harmful to the treatment processes shall not be accepted. Wastes which contain heavy metals, toxic chemicals, extreme pH, flammable or corrosive materials in concentrations harmful to the treatment operation shall be refused.
6. During wet weather events, septage may be received into the septage holding facilities but shall not be added to the treatment process or solids handling facilities.
7. Holding tank waste water shall not be recorded as septage and should be reported in the treatment facility's influent flow.
8. Any trucked-in waste that has the characteristics of septage, specifically with regard to biochemical oxygen demand (5,000 mg/L or greater) and total suspended solids (10,000 mg/L or greater) shall be considered as septage and is subject to the limitations specified in this section above.
9. If conditions change within the permittee's septage management program, the permittee shall provide the Department with an updated septage management plan that reflects such changes, pursuant to Department rule, Chapter 555, *Standards for the Addition of Septage to Waste Water Treatment Facilities*.

**SPECIAL CONDITIONS**

**M. EFFLUENT CONDITIONS AND LIMITATIONS FOR COMBINED SEWER OVERFLOWS (CSOs)**

Pursuant to Chapter 570 of Department rules, *Combined Sewer Overflow Abatement*, the permittee is authorized to discharge from the following locations of combined sewer overflows (CSO's) (storm water and sanitary wastewater) subject to the conditions and requirements herein.

1. CSO Locations

<u>Outfall #</u>	<u>Outfall Location</u>	<u>Receiving Water and Class</u>
002	Miller Street CSO	Belfast Harbor, SB
003	Condon Street CSO	Belfast Harbor, SB

2. Prohibited Discharges

- a) The discharge of dry weather flows is prohibited. All such discharges shall be reported to the Department in accordance with Standard Condition D (1) of this permit.
- b) No discharge shall occur as a result of mechanical failure, improper design or inadequate operation or maintenance.
- c) No discharges shall occur at flow rates below the maximum design capacities of the wastewater treatment facility, pumping stations or sewerage system.

3. Narrative Effluent Limitations

- a) The effluent shall not contain a visible oil sheen, settled substances, foam, or floating solids at any time that impair the characteristics and designated uses ascribed to the classification of the receiving waters.
- b) The effluent shall not contain materials in concentrations or combinations that are hazardous or toxic to aquatic life; or which would impair the usage designated by the classification of the receiving waters.
- c) The discharge shall not impart color, turbidity, toxicity, radioactivity or other properties that cause the receiving waters to be unsuitable for the designated uses and other characteristics ascribed to their class.

## SPECIAL CONDITIONS

### M. EFFLUENT LIMITATIONS AND CONDITIONS FOR CSO'S (cont'd)

4. CSO Master Plan (see Sections 2 and 3 of Department rule Chapter 570)

The permittee shall implement CSO control projects in accordance with the approved CSO Master Plan entitled *Sewer System Master Plan for CSO Abatement City of Belfast, ME, January 2000*, prepared by Olver Associates, and the updated plan entitled *Updated Master Plan for CSO Abatement, City of Belfast, Maine, September 2005*, prepared by Olver Associates. The updated Master Plan was approved by the Department on April 26, 2006.

**On or before December 31, 2006, [PCS Code 04599]** the permittee shall substantially complete construction of the CSO abatement work identified in the Updated Master Plan as Rehabilitate Salmond/Cedar Street Sewers and Rehabilitate Northport Avenue Sewers.

**On or before December 31, 2007, [PCS Code 06699]** the permittee shall submit a CSO Master Plan Update evaluating the success of the abatement projects and the need to proceed with the Upgrade of the Treatment Plant Influent Pump Capacity and subsequent CSO Abatement Projects.

To modify the dates and or projects specified above, the permittee must file an application with the Department to formally modify the permit. The remaining work items identified in the abatement schedule may be amended from time to time based on mutual agreements between the permittee and the Department. The permittee must notify the Department in writing prior to any proposed changes to the implementation schedule.

5. Nine Minimum Controls (NMC) (see Section 5 of Department rule Chapter 570)

The permittee shall implement and follow the Nine Minimum Control documentation as approved by EPA on August 2, 2000. Work performed on the Nine Minimum Controls during the year shall be included in the annual CSO Progress Report (see below).

6. CSO Compliance Monitoring Program (see Section 6 of Department rule Chapter 570)

The permittee shall conduct block testing or flow monitoring according to an approved *Compliance Monitoring Program* on all CSO points, as part of the CSO Master Plan. Annual flow volumes for all CSO locations shall be determined by actual flow monitoring, or by estimation using a model such as EPA's Storm Water Management Model (SWMM).

**Results shall be submitted annually** as part of the annual *CSO Progress Report* (see below), and shall include annual precipitation, CSO volumes (actual or estimated) and any block test data required. Any abnormalities during CSO monitoring shall also be reported. The results shall be reported on the Department form "CSO Activity and Volumes" included as Attachment D of this permit or similar format and submitted to the Department on diskette.

## SPECIAL CONDITIONS

### M. EFFLUENT LIMITATIONS AND CONDITIONS FOR CSO'S (cont'd)

CSO control projects that have been completed shall be monitored for volume and frequency of overflow to determine the effectiveness of the project toward CSO abatement. This requirement shall not apply to those areas where complete separation has been completed and CSO outfalls have been eliminated.

7. Additions of New Wastewater (see Section 8 of Department rule Chapter 570)

Chapter 570 Section 8 lists requirements relating to any proposed addition of wastewater to the combined sewer system. Documentation of the new wastewater additions to the system and associated mitigating measures shall be included in the annual *CSO Progress Report* (see below). Reports must contain the volumes and characteristics of the wastewater added or authorized for addition and descriptions of the sewer system improvements and estimated effectiveness.

8. Annual CSO Progress Reports (see Section 7 of Department rule Chapter 570)

**By March 1** of each year [*PCS Event 11099*], the permittee shall submit *CSO Progress Reports* covering the previous calendar year (January 1 to December 31). The CSO Progress Report shall include, but is not necessarily limited to, the following topics as further described in Chapter 570: CSO abatement projects, schedule comparison, progress on inflow sources, costs, flow monitoring results, CSO activity and volumes, nine minimum controls update, sewer extensions, and new commercial or industrial flows.

The CSO Progress Reports shall be completed on a standard form entitled "*Annual CSO Progress Report*," furnished by the Department, and submitted in electronic form, if possible, to the following address:

CSO Coordinator  
Department of Environmental Protection  
Bureau of Land and Water Quality  
Division of Water Quality Management  
17 State House Station  
Augusta, Maine 04333  
e-mail: [CSOCoordinator@maine.gov](mailto:CSOCoordinator@maine.gov)

## **SPECIAL CONDITIONS**

### **M. EFFLUENT LIMITATIONS AND CONDITIONS FOR CSO'S (cont'd)**

#### **9. Signs**

If not already installed, the permittee shall install and maintain an identification sign at each CSO location as notification to the public that intermittent discharges of untreated sanitary wastewater occur. The sign must be located at or near the outfall and be easily readable by the public. The sign shall be a minimum of 12" x 18" in size with white lettering against a green background and shall contain the following information:

**CITY OF BELFAST  
WET WEATHER  
SEWAGE DISCHARGE  
CSO # AND NAME OF OUTFALL**

#### **10. Definitions**

For the purposes of this permitting action, the following terms are defined as follows:

- a. Combined Sewer Overflow - a discharge of excess waste water from a municipal or quasi-municipal sewerage system that conveys both sanitary wastes and storm water in a single pipe system and that is in direct response to a storm event or snowmelt.
- b. Dry Weather Flows - flow in a sewerage system that occurs as a result of non-storm events or are caused solely by ground water infiltration.
- c. Wet Weather Flows - flow in a sewerage system that occurs as a direct result of a storm event, or snowmelt in combination with dry weather flows.

### **N. REOPENING OF PERMIT FOR MODIFICATION**

Upon evaluation of the tests results in the Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at anytime and with notice to the permittee, modify this permit to: (1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded; (2) require additional monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

### **O. SEVERABILITY**

In the event that any provision, or part thereof, of this permit is declared to be unlawful by a reviewing court, the remainder of the permit shall remain in full force and effect, and shall be construed and enforced in all aspects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

# **ATTACHMENT A**



# **ATTACHMENT B**

**MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION  
WET AND ANALYTICAL CHEMISTRY RESULTS  
MARINE WATERS**

Facility Name \_\_\_\_\_ MEPDES Permit # \_\_\_\_\_

Facility Representative \_\_\_\_\_ Signature \_\_\_\_\_

By signing this form, I attest to the best of my knowledge that the information provided is true, accurate and complete.

Date Collected \_\_\_\_\_  
mm/dd/yy

Date Analyzed \_\_\_\_\_  
mm/dd/yy

Lab ID No. \_\_\_\_\_

Actual Daily Discharge Flow \_\_\_\_\_ MGD  
Monthly Average Discharge Flow \_\_\_\_\_ MGD

Analyte	Report	Receiving Water	Effluent	Reporting	Method
	Units	Results	Results	Level	
Analytes Required for Analytical Chemistry	Ammonia nitrogen	µg/L	*		µg/L
	Total aluminum	µg/L	*		µg/L
	Total arsenic	µg/L	*		µg/L
	Total cadmium	µg/L	*		µg/L
	Total chromium	µg/L	*		µg/L
	Total copper	µg/L	*		µg/L
	Total cyanide	µg/L	*		µg/L
	Total lead	µg/L	*		µg/L
	Total nickel	µg/L	*		µg/L
	Total silver	µg/L	*		µg/L
	Total zinc	µg/L	*		µg/L
Total residual chlorine **	mg/L			mg/L	
Additional Analytes Required For WET Chemistry	Total organic carbon	mg/L			mg/L
	Total solids	mg/L			mg/L
	Total suspended solids	mg/L			mg/L
	Salinity	ppt			ppt
	pH **	S.U.	*		S.U.

\* The receiving water chemistry tests are optional. However, samples of the receiving water should be preserved and saved for the duration of the WET test. In the event of questions about the receiving water's possible effect on the WET results, chemistry tests should then be conducted.

\*\* WET laboratories may conduct these tests on composite samples as part of their procedures.

Comments \_\_\_\_\_

Laboratory conducting test  
Company Name \_\_\_\_\_ Company Rep. Name (Printed) \_\_\_\_\_

Mailing Address \_\_\_\_\_ Company Rep. Signature \_\_\_\_\_

City, State, ZIP \_\_\_\_\_ Company Telephone # \_\_\_\_\_

# **ATTACHMENT C**

Maine Department of Environmental Protection  
WET and Chemical Specific Data Report Form

This form is for reporting laboratory data and facility information. Official compliance reviews will be done by DEP.

Facility Name \_\_\_\_\_ MEPDES # \_\_\_\_\_ Facility Representative Signature \_\_\_\_\_  
 Pipe # \_\_\_\_\_ To the best of my knowledge this information is true, accurate and complete.

Licensed Flow (MGD) \_\_\_\_\_ Flow for Day (MGD)<sup>(1)</sup> \_\_\_\_\_ Flow Avg. for Month (MGD)<sup>(2)</sup> \_\_\_\_\_  
 Acute dilution factor \_\_\_\_\_ Date Sample Collected \_\_\_\_\_ Date Sample Analyzed \_\_\_\_\_  
 Chronic dilution factor \_\_\_\_\_ Laboratory Address \_\_\_\_\_ Telephone \_\_\_\_\_  
 Human health dilution factor \_\_\_\_\_ Lab Contact \_\_\_\_\_ Lab ID # \_\_\_\_\_  
 Criteria type: M(marine) or F(fresh)

ERROR WARNING ! Essential facility information is missing. Please check required entries in bold above.

Parameter	Effluent Limits, %		Reporting Limit	Effluent Limits, ug/L		Health <sup>(6)</sup>	Receiving Water or Ambient	Effluent Concentration (ug/L or as noted)	Possible Exceedance <sup>(7)</sup>	
	Acute	Chronic		Acute <sup>(6)</sup>	Chronic <sup>(6)</sup>				Reporting Limit Check	Acute
<b>WHOLE EFFLUENT TOXICITY</b>										
Trout - Acute			0.05							
Trout - Chronic			NA							
Water Flea - Acute			NA							
Water Flea - Chronic			5							
<b>WET CHEMISTRY</b>										
pH (S.U.)			1							
Specific Conductance (umhos)			10							
Total Organic Carbon (mg/L)			3							
Total Solids (mg/L)			5							
Total Suspended Solids (mg/L)			3							
Alkalinity (mg/L)			5							
Total Hardness (mg/L)			1							
Total Magnesium (mg/L)			5							
Total Calcium (mg/L)			5							
<b>ANALYTICAL CHEMISTRY<sup>(3)</sup></b>										
TOTAL RESIDUAL CHLORINE (mg/L)			0.05							
AMMONIA			NA							
ALUMINIUM			NA							
ARSENIC			5							
CADMIUM			1							
CHROMIUM			10							
COPPER			3							
CYANIDE			5							
LEAD			3							
NICKEL			5							
SILVER			1							
ZINC			5							

Maine Department of Environmental Protection  
WET and Chemical Specific Data Report Form

This form is for reporting laboratory data and facility information. Official compliance reviews will be done by DEP.

PRIORITY POLLUTANTS (4)	Reporting Limit	Effluent Limits		Reporting Limit Check	Possible Exceedence (7)	
		Acute (6)	Chronic (6)		Health (6)	Health
M ANTIMONY	5					
M BERYLLIUM	2					
M MERCURY(4)	0.2					
M SELENIUM	5					
M THALLIUM	4					
A 2,4,6-TRICHLOROPHENOL	3					
A 2,4-DICHLOROPHENOL	5					
A 2,4-DIMETHYLPHENOL	5					
A 2,4-DINITROPHENOL	45					
A 2-CHLOROPHENOL	5					
A 2-NITROPHENOL	5					
A 4,6-DINITRO-O-CRESOL (2-Methyl-4,6-dinitrophenol)	25					
A 4-NITROPHENOL	20					
A P-CHLORO-M-CRESOL (3-methyl-4-chlorophenol)+B80	5					
A PENTACHLOROPHENOL	20					
A PHENOL	5					
BN 1,2,4-TRICHLOROBENZENE	5					
BN 1,2-(O)DICHLOROBENZENE	5					
BN 1,2-DIPHENYLHYDRAZINE	10					
BN 1,3-(M)DICHLOROBENZENE	5					
BN 1,4-(P)DICHLOROBENZENE	5					
BN 2,4-DINITROTOLUENE	6					
BN 2,6-DINITROTOLUENE	5					
BN 2-CHLORONAPHTHALENE	5					
BN 3,3'-DICHLOROBENZIDINE	16.5					
BN 3,4-BENZO(B)FLUORANTHENE	5					
BN 4-BROMOPHENYLPHENYL ETHER	2					
BN 4-CHLOROPHENYL PHENYL ETHER	5					
BN ACENAPHTHENE	5					
BN ACENAPHTHYLENE	5					
BN ANTHRACENE	5					
BN BENZIDINE	45					
BN BENZO(A)ANTHRACENE	8					
BN BENZO(A)PYRENE	3					
BN BENZO(G,H,I)PERYLENE	5					
BN BENZO(K)FLUORANTHENE	3					
BN BIS(2-CHLOROETHOXY)METHANE	5					
BN BIS(2-CHLOROETHYL)ETHER	6					
BN BIS(2-CHLOROISOPROPYL)ETHER	6					
BN BIS(2-ETHYLHEXYL)PHTHALATE	3					
BN BUTYLBENZYL PHTHALATE	5					
BN CHRYSENE	3					
BN DI-N-BUTYL PHTHALATE	5					
BN DI-N-OCTYL PHTHALATE	5					
BN DIBENZO(A,H)ANTHRACENE	5					
BN DIETHYL PHTHALATE	5					
BN DIMETHYL PHTHALATE	5					





# **ATTACHMENT D**

**ATTACHMENT D  
MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION  
CSO ACTIVITY AND VOLUMES**

MUNICIPALITY OR DISTRICT		MEPDES / NPDES PERMIT NO.							
REPORTING YEAR		SIGNED BY:							
YEARLY TOTAL PRECIPITATION		DATE:							
INCHES		FLOW DATA (GALLONS PER DAY) OR BLOCK ACTIVITY ("1")							
CSO EVENT NO.	START DATE OF STORM	PRECIP. DATA		LOCATION:	LOCATION:	LOCATION:	LOCATION:	EVENT OVERFLOW GALLONS	EVENT DURATION HRS
		TOTAL INCHES	MAX. HR. INCHES						
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
<b>TOTALS</b>									

Note 1: Flow data should be listed as gallons per day. Storms lasting more than one day should show total flow for each day.

Note 2: Block activity should be shown as a "1" if the block floated away.

**MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT  
MAINE WASTE DISCHARGE LICENSE**

**FACT SHEET**

Date: **MAY 19, 2006**

PERMIT NUMBER: **#ME0101532**  
WASTE DISCHARGE LICENSE: **#W000569-5L -F-R**

NAME AND ADDRESS OF APPLICANT:

**CITY OF BELFAST  
131 CHURCH STREET  
BELFAST, MAINE 04915**

COUNTY: **WALDO**

NAME AND ADDRESS WHERE DISCHARGE(S) OCCUR(S):

**BELFAST WASTEWATER TREATMENT FACILITY  
FRONT STREET  
BELFAST, MAINE 04915**

RECEIVING WATER/CLASSIFICATION: **BELFAST HARBOR/CLASS SB**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER:

**MR. JON CARMAN, CONTRACT OPERATOR  
OFFICE: (207) 948-3228 TREATMENT PLANT: (207) 338-1744  
AND  
MR. TERRENCE ST. PETER, CITY MANAGER  
(207) 338-3370**

**1. APPLICATION SUMMARY**

Application: The City of Belfast (City) has applied to the Department of Environmental Protection (Department) for renewal of Department Waste Discharge License (WDL) #W000569-5L-C-R / Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0101532, which was issued on June 19, 2001, and two administrative modifications (issued on June 28, 2001 and June 11, 2004). The 6/19/01 MEPDES permit and subsequent administrative modifications authorized the City to discharge a monthly average flow of up to 0.90 million gallons per day (MGD) of secondary treated sanitary wastewater from a publicly owned treatment works (POTW) and an unspecified quantity of untreated excess combined sanitary and storm water wastewater from two combined sewer overflow (CSO) points to the Atlantic Ocean at Belfast Harbor, Class SB, in Belfast, Maine. The 6/19/01 permit is scheduled to expire on June 19, 2006.

## 2. PERMIT SUMMARY

- a. Terms and Conditions: **This permitting action is similar to the 6/19/01 permitting action and two administrative modifications thereof in that it is:**
1. Carrying forward the daily maximum discharge flow reporting requirement;
  2. Carrying forward the monthly average, weekly average and daily maximum concentration limits for biochemical oxygen demand (BOD<sub>5</sub>) and total suspended solids (TSS);
  3. Carrying forward the monthly average and weekly average technology-based mass limits for BOD<sub>5</sub> and TSS;
  4. Carrying forward the daily maximum BOD<sub>5</sub> and TSS mass reporting requirements;
  5. Carrying forward the requirement for a minimum of 85% removal of BOD<sub>5</sub> and TSS;
  6. Carrying forward the daily maximum technology-based concentration limit for settleable solids;
  7. Carrying forward the seasonal monthly average and daily maximum concentration limits for fecal coliform bacteria;
  8. Carrying forward the technology-based monthly average concentration limit for total residual chlorine (TRC);
  9. Carrying forward the pH range limit of 6.0 to 9.0 standard units (SU);
  10. Carrying forward authorization to discharge an unspecified quantity of excess combined sanitary wastewater and storm water during wet weather events via two combined sewer overflow (CSO) points; and
  11. Carrying forward the minimum monitoring frequency requirements for all monitored parameters.

## PERMIT SUMMARY (cont'd)

**This permitting action is different from the 6/19/01 permitting action and two administrative modifications thereof in that it is**

1. Eliminating the numeric monthly average discharge flow limitation of 0.9 MGD and establishing a monthly average discharge flow report only requirement;
  2. Revising the daily maximum water quality-based concentration limit from 0.25 mg/L to 0.23 mg/L;
  3. Revising whole effluent toxicity (WET) and priority pollutant testing requirements and test organisms based on revised "toxics" rule, Chapter 530;
  4. Eliminating the acute limit of 5.3% for the mysid shrimp based on results of facility testing;
  5. Establishing analytical chemistry testing pursuant to revised "toxics" rule Chapter 530;
  6. Revising the daily maximum, water quality-based concentration and mass limits for total copper based on a revised ambient water quality criteria;
  7. Establishing Special Condition I, *Chapter 530(2)(D)(4) Statement for Reduced Toxics Testing* for reduced WET and analytical chemistry testing;
  8. Revising authorization to accept and introduce into the treatment works septage from a daily maximum of up to 2,000 gallons per day (GPD) and a monthly maximum of 30,000 GPD to daily maximum and monthly maximum limits of 7,000 GPD and 56,000 GPD, respectively; and
  9. Eliminating the annual reporting requirements for septage and other high strength wastes added to the treatment process (previous Special Condition N).
- b. History: This section provides a summary of the most recent significant licensing and permitting actions completed for the Belfast facility as well as other significant regulatory actions.

September 26, 1997 – The USEPA issued a renewal of National Pollutant Discharge Elimination System (NPDES) permit #ME0101532 to the City. The 9/26/97 permit superseded NPDES permits issued to the City by the USEPA on September 19, 1994, October 5, 1990, September 19, 1989, and March 31, 1984 (earliest NPDES permit on file with the Department).

## 2. PERMIT SUMMARY (cont'd)

May 23, 2000 – Pursuant to Maine law, 38 M.R.S.A. §420 and §413 and Department rule, 06-096 CMR Chapter 519, *Interim Effluent Limitations and Controls for the Discharge of Mercury*, the Department issued a *Notice of Interim Limits for the Discharge of Mercury* to the permittee thereby administratively modifying WDL #W000569-46-B-R by establishing interim monthly average and daily maximum effluent concentration limits of 27.6 parts per trillion (ppt) and 41.4 ppt, respectively, and a minimum monitoring frequency requirement of 4 tests per year for mercury. It is noted the limitations have not been incorporated into Special Condition A, *Effluent Limitations And Monitoring Requirements*, of this permit as limitations and monitoring frequencies are regulated separately through Maine law, 38 M.R.S.A. §413 and Department rule Chapter 519. However, the interim limitations remain in effect and enforceable and any modifications to the limits and or monitoring requirements will be formalized outside of this permitting document.

June 19, 2001 – The Department issued MEPDES permit #ME0101532 / WDL #W000569-5L-C-R to the City for a five-year term. The 6/19/01 permit superseded WDL #W000569-46-B-R issued on July 8, 1994, WDL #W000569-46-A-R issued on March 13, 1987, and WDL #569 issued on September 9, 1981 (earliest Order on file with the Department).

June 28, 2001 – The Department administratively modified the 6/19/01 MEPDES permit to correct the minimum monitoring frequency requirement for BOD from once per week to twice per week.

June 11, 2004 – The Department administratively modified the 6/19/01 MEPDES permit to increase the monthly average discharge flow limitation from 0.7 MGD to 0.90 MGD. It is noted that the modification did not result in a corresponding increase in the mass limitations for BOD<sub>5</sub> or TSS or the dilution factors associated with the discharge from the facility.

March 13, 2006 – The City submitted a timely and complete General Application to the Department for renewal of the 6/13/01 MEPDES permit. The application was accepted for processing on March 15, 2006 and was assigned WDL # W000569-5L-D-R / MEPDES #ME0101532.

- c. Source Description: The Belfast Wastewater Treatment Facility is located on Front Street in the downtown waterfront area of Belfast. A map created by the Department showing the location of the treatment facility and receiving water is included as Fact Sheet Attachment A. The facility treats residential and commercial waste waters generated by approximately 5,000 customers (1,350 hookups) within the City of Belfast. The City reports no significant industrial contributors or any industries with pretreatment requirements discharging wastewater into the City's collection system. The City has an agreement with Ducktrap River Fish Farms whereby "brine waste" is delivered to the treatment plant and placed in holding tanks and then gradually added to the treatment plant influent.

## 2. PERMIT SUMMARY (cont'd)

The City's sewer collection system is approximately 32 miles in length, contains 18 pump stations, is approximately 95% separated and 5% combined, and contains 2 CSO points. As a component of the City's CSO abatement projects, the City continues to replace substandard and old vitrified clay sewer lines throughout the collection system. Five of the pump stations are equipped with on-site back-up power source, three small submersible pump stations do not have back-up power or connections, but have long wet well holding capacities and can be pumped down periodically if necessary, to avoid overflows, and the remaining ten stations are serviced with portable generators.

The City has submitted an updated Septage Management Plan as part of their March 15, 2006 renewal application, which has been reviewed and approved by the Department. The septage plan is consistent with the requirements of Department rule Chapter 555, *Regulations Relating To The Addition of Septage To Waste Water Treatment Facilities*. This permitting action is revising authorization for the facility to receive and introduce into the treatment process septage from a daily maximum of up to 2,000 gallons per day and a monthly total of up to 30,000 gallons per day to a daily maximum limit of 7,000 GPD and a monthly total of up to 56,000 GPD. Also see Special Condition L, *Disposal of Septage Waste In Waste Water Treatment Facility* of this permit.

- d. Wastewater Treatment: Wastewater received at the treatment plant currently receives a secondary level of treatment via a channel grinder, a grit collection system, two "package" units that provide for aeration and clarification, and disinfection using sodium hypochlorite. Sludge generated by the plant is dewatered using a 1.5 meter belt filter press and transported to Soil Preparation, Inc., of Plymouth, Maine, for additional processing. The plant is currently operated in the extended aeration operational mode.

A new, 300,000-gallon aerobic digester has been constructed and placed into service, and the existing digesters within the package units have been dismantled providing an additional 70,000 gallons (2 units x 35,000 gallons) of aeration capacity. The design capacity of the plant is 0.7 MGD (average flow) as determined from studies conducted by Olver Associates, Inc. of Winterport, Maine. However, the extended aeration operational allows the facility to handle higher hydraulic loadings with no adverse impact on effluent quality. Schematics of Belfast's treatment facility and sewer collection system are provided as Fact Sheet Attachment B.

Final effluent is conveyed for discharge to Belfast Harbor via a 16-inch diameter reinforced concrete outfall pipe (Outfall #001A). The pipe is located approximately 40 feet out into the harbor to a depth of approximately 18 feet at mean low water. The pipe is not fitted with diffusers or other structures intended to enhance mixing of the effluent with the receiving waters.

### 3. CONDITIONS OF PERMITS

Maine law, 38 M.R.S.A. Section 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, 38 M.R.S.A., Section 420 and Department rule 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, require the regulation of toxic substances not to exceed levels set forth in Department rule 06-096 CMR Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

### 4. RECEIVING WATER QUALITY STANDARDS

Maine law, 38 M.R.S.A. §469 classifies the Atlantic Ocean at Belfast Harbor, as Class SB waters. Maine law, 38 M.R.S.A. §465-B(2) describes the standards for Class SB waters.

### 5. RECEIVING WATER QUALITY CONDITIONS

*The State of Maine 2004 Integrated Water Quality Monitoring and Assessment Report*, prepared by the Department pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act, lists the estuarine and marine waters at Belfast as, "*Category 4-B-2: Estuarine and Marine Waters Impaired by Bacteria From Combined Sewer Overflows (TMDL Required Only if Control Plans are Insufficient)*" (Waterbody ID#722-41). The Report also lists the receiving waters as, "*Category 5-B-1: Estuarine and Marine Waters Impaired only by Bacteria (TMDL Required)*" (Waterbody ID#722-23) and lists sources causing impairment as discharges from sewage treatment plants, overboard discharge systems, boats, and non-point source pollution. The Department has not scheduled a total maximum daily load (TMDL) study for Belfast Harbor at this time.

The City has developed and implemented a CSO master plan for the elimination of all CSO points associated with the Belfast wastewater treatment facility collection system. The Department acknowledges that elimination of all CSO points is a costly and long-term project. As the City's treatment plant and sewer collection system are upgraded and maintained in according to the CSO Master Plan and Nine Minimum Controls, there should be reductions in the frequency and volume of CSO activities and, over time, improvement in the quality of the wastewater discharged to the receiving waters.

In addition, all estuarine and marine waters of the State are listed as, "*Category 4-B-3: Estuarine and Marine Waters Impaired by Atmospheric Deposition of Mercury*" and "*Category 5-D: Estuarine and Marine Waters Impaired by Legacy Pollutants.*" Impairment in this context refers to the estuarine and marine waters partially supporting the designated use of fishing and harvesting of shellfish due to elevated levels of mercury, PCBs, dioxin, and other persistent bioaccumulating substances in tissues of some fish and in lobster tomalley. Pursuant to Maine law, 38 M.R.S.A. §420(1-B)(B), "*a facility is not in violation of the ambient criteria for mercury if the facility is in*

## 5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

*compliance with an interim discharge limit established by the Department pursuant to section 413 subsection 11.*" The Department has established interim monthly average and daily maximum mercury concentration limits for this facility.

The Maine Department of Marine Resources (DMR) assesses information on shellfish growing areas to ensure that shellfish harvested are safe for consumption. The DMR has authority to close shellfish harvesting areas wherever there is a pollution source, a potential pollution threat, or poor water quality. The DMR traditionally closes shellfish harvesting areas if there are known sources of discharges with unacceptable bacteria levels (instream thresholds established in the National Shellfish Sanitation Program) or maintains shellfish harvesting closure areas due to lack of updated information regarding ambient water quality conditions. In addition, the DMR prohibits shellfish harvesting in the immediate vicinity of all wastewater treatment outfall pipes as a precautionary measure in the event of a failure in the treatment plant's disinfection system. Thus, shellfish harvesting area #32 is closed to the harvesting of shellfish due to insufficient or limited ambient water quality data to determine that the area meets the standards in the National Shellfish Sanitation Program. The shellfish closure area is identified on the map included as Fact Sheet Attachment A. The Department is making the determination that compliance with the fecal coliform bacteria and other secondary wastewater treatment limits established in this permitting action ensure that the discharge of secondary treated wastewater from the Belfast Wastewater Treatment Facility will not cause or contribute to the failure of the receiving waters to meet the standards of its designated classification.

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

- a. Flow: The City reports that the average daily dry weather design flow for the treatment facility is 0.7 MGD. The previous (6/19/01) permitting action established a monthly average discharge flow limitation of 0.7 MGD based on this design criterion. Sections of the sewerage treatment collection system have been upgraded to reduce discharges from sanitary sewer overflows and combined sewer overflow points, which has resulted in the City occasionally exceeding the 0.7 MGD flow limitation. On June 11, 2004, the Department issued an administrative modification to the City thereby revising the monthly average discharge flow limit from 0.7 MGD to 0.90 MGD to encourage the facility to maximize use of secondary treatment processes during wet weather events. Mass limitations based on the 0.7 MGD limit, however, were carried forward in the modification. In this permitting action, the Department is acknowledging that increasing the flow limitation above the design capacity is not consistent with Department rules for establishing effluent limitations or with the methodology utilized in establishing discharge flow limitations for other facilities with similar wet weather flow discharges. Therefore, this permitting action identifies that the design capacity of the treatment facility is 0.7 MGD, but is revising the limitation by establishing a report only requirement to encourage the facility to maximize use of secondary treatment processes during wet weather events. This permitting action is carrying forward the daily maximum discharge flow reporting requirement. Mass limitations established in this permitting action shall be based on the actual design criterion of 0.7 MGD. Dilution factors shall be based on the most recent numeric

## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

discharge flow limitation of 0.90 MGD to ensure that flows discharged above the 0.7 MGD design are protective of receiving water quality in terms of toxic pollutant discharges.

A review of the monthly average flow data as reported on the Discharge Monitoring Reports (DMR) submitted to the Department for the period January 2003 – December 2005 indicates the monthly average flow has ranged from 0.038 MGD to 0.97 MGD with an arithmetic mean of 0.61 MGD.

- b. Dilution Factors: Department rule, 06-096 CMR Chapter 530 Section 4.A.2.a, *Surface Water Toxics Control Program*, states that, “For discharges to the ocean, dilution must be calculated as near-field or initial dilution, or that dilution available as the effluent plume rises from the point of discharge to its trapping level, at mean low water level and slack tide for the acute exposure analysis, and at mean tide for the chronic exposure analysis using appropriate models determined by the Department such as MERGE, CORMIX or another predictive model.” Based on the configuration of Outfall #001A and an average wet weather discharge flow of 0.90 MGD as discussed in Section 6(a) above, dilution factors associated with the discharge are as follows:

Acute = 17.7:1                  Chronic = 33.9:1                  Harmonic mean<sup>1</sup> = 101.7:1

As progress is made on CSO abatement, hydraulic loading to the facility may change. The Department will consider the actual discharge flows from the facility in establishing dilution factors associated with the discharge in future permit renewals as was done during this permit renewal.

- c. Biochemical Oxygen Demand (BOD<sub>5</sub>) and Total Suspended Solids (TSS): The previous permitting action established, and this permitting action is carrying forward, technology-based monthly and weekly average BOD<sub>5</sub> and TSS concentration limits of 30 mg/L and 45 mg/L, respectively, based on secondary treatment requirements of Department rule, 06-096 CMR, Chapter 525(3)(III). The previous permitting action established, and this permitting action is carrying forward, technology-based daily maximum BOD<sub>5</sub> and TSS concentration limits of 50 mg/L based on a Department best professional judgment (BPJ) of best practicable treatment (BPT). The previous permitting action established, and this permitting action is carrying forward, monthly average and weekly average mass limits based on calculations using the average design flow for the facility of 0.7 MGD and the appropriate concentration limits as follows:

Monthly Average Mass Limit: (30 mg/L)(8.34 lbs./gallon)(0.7 MGD) = 175 lbs./day  
Weekly Average Mass Limit: (45 mg/L)(8.34 lbs./day)(0.7 MGD) = 263 lbs./day

---

<sup>1</sup> The harmonic mean dilution factor is approximated by multiplying the chronic dilution factor by three (3). This multiplying factor is based on guidelines for estimation of human health dilution presented in the U.S. EPA publication, “*Technical Support Document for Water Quality-Based Toxics Control*” (Office of Water, EPA/505/2-90-001, page 88), and represents an estimation of harmonic mean flow on which human health dilutions are based in a riverine 7Q10 flow situation.

## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

The previous permitting action established, and this permitting action is carrying forward, a daily maximum BOD<sub>5</sub> and TSS mass reporting requirement to encourage the City to maximum use of secondary treatment processes during wet weather events.

The previous permitting action established, and this permitting action is carrying forward, a requirement to achieve a minimum 30-day average removal of 85 percent for BOD<sub>5</sub> and TSS pursuant to Department rule, 06-096 CMR Chapter 525(3)(III)(a&b)(3).

The previous permitting action and administrative modifications thereof established, and this permitting action is carrying forward, a minimum monitoring frequency requirement of two times per week (2/Week) for BOD<sub>5</sub> and TSS, which is based on Department guidance for POTWs permitted to discharge between 0.5 and 1.5 MGD, and a "24-hour composite" sample type.

For BOD<sub>5</sub>, a review of the monthly average and daily maximum data as reported on the Discharge Monitoring Reports submitted to the Department for the period January 2003 – December 2005 indicates the monthly average BOD<sub>5</sub> mass discharged has ranged from 56 lbs./day to 150 lbs./day with an arithmetic mean of 95 lbs./day. The maximum daily BOD<sub>5</sub> mass discharged has ranged from 63 lbs./day to 312 lbs./day with an arithmetic mean of 147 lbs./day.

For TSS, a review of the monthly average and daily maximum data as reported on the Discharge Monitoring Reports submitted to the Department for the period January 2003 – December 2005 indicates the monthly average TSS mass discharged has ranged from 19 lbs./day to 46 lbs./day with an arithmetic mean of 28 lbs./day. The maximum daily TSS mass discharged has ranged from 22 lbs./day to 129 lbs./day with an arithmetic mean of 48 lbs./day.

- d. Settleable Solids: The previous permitting action established, and this permitting action is carrying forward, a technology-based daily maximum concentration limit of 0.3 ml/L for settleable solids, which is considered a best practicable treatment limitation (BPT) for secondary treated wastewater. This permitting action is carrying forward the minimum monitoring frequency requirement of once per day (1/Day), which is based on Department guidance for POTWs permitted to discharge between 0.5 and 1.5 MGD, and a "grab" sample type.

A review of the daily maximum data as reported on the Discharge Monitoring Reports submitted to the Department for the period January 2003 – December 2005 indicates the daily maximum settleable solids concentration discharge has been 0.1 ml/L or lower 100% of the time during said reporting period with no reported exceedances.

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

- e. Fecal Coliform Bacteria: The previous permitting action established, and this permitting action is carrying forward, seasonal monthly average and daily maximum concentration limits of 15 colonies/100 ml and 50 colonies/100 ml, respectively, for fecal coliform bacteria, which are consistent with the National Shellfish Sanitation Program, a minimum monitoring frequency requirement of two times per week (2/Week), which is based on Department guidance for POTWs permitted to discharge between 0.5 and 1.5 MGD, and a “grab” sample type. Bacteria limits are seasonal and apply between May 15 and September 30 of each year, however, the Department reserves the right to require year-round disinfection to protect the health, safety and welfare of the public.

A review of the monthly average and daily maximum data as reported on the Discharge Monitoring Reports submitted to the Department for the period January 2003 – December 2005 (months of May through September only) indicates the monthly average (geometric mean) fecal coliform bacteria discharged has ranged from 1.4 colonies/100 ml to 7.5 colonies/100 ml with an arithmetic mean of 3.1 colonies/100 ml. The maximum daily fecal coliform bacteria discharged has ranged from 3.0 colonies/100 ml to 33.0 colonies/100 ml with an arithmetic mean of 12.1 colonies/100 ml. The DMR indicates the facility has been in compliance with the monthly average and daily maximum limitations 100% of the time during said reporting period.

- f. Total Residual Chlorine (TRC): The previous permitting action established technology-based monthly average and water quality-based daily maximum concentration limits of 0.1 mg/L and 0.25 mg/L, respectively, for TRC. Limitations on TRC are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. Department permitting actions impose the more stringent of either a water quality-based or BPT-based limit.

With dilution factors as determined above, end-of-pipe (EOP) water quality-based concentration thresholds for TRC may be calculated as follows:

Acute (A) Criterion	Chronic (C) Criterion	A & C Dilution Factors	Calculated	
			Acute Threshold	Chronic Threshold
0.013 mg/L	0.0075 mg/L	17.7:1 (A) 33.9:1 (C)	0.23 mg/L	0.25 mg/L

The Department has established a daily maximum BPT limitation of 1.0 mg/L for facilities that disinfect their effluent with elemental chlorine or chlorine-based compounds. For facilities that need to dechlorinate the discharge in order to meet water quality based thresholds, the Department has established daily maximum and monthly average BPT limits of 0.3 mg/L and 0.1 mg/L, respectively. The City dechlorinates the effluent prior to discharge in order to consistently achieve compliance with the water quality-based thresholds. The calculated acute water quality-based threshold of 0.23 mg/L is more stringent than the daily maximum technology-based standard of 0.3 mg/L and is therefore being established in this permitting action. The monthly average technology-based standard of 0.1 mg/L is more stringent than the

## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

calculated chronic water quality-based threshold of 0.23 mg/L and is therefore being established in this permitting action. This permitting action is carrying forward the minimum monitoring frequency of once per day (1/Day), which is based on Department guidance for POTWs permitted to discharge between 0.5 and 1.5 MGD, and “grab” sample type for TRC.

A review of the daily maximum data as reported on the Discharge Monitoring Reports submitted to the Department for the period January 2003 – December 2005 (months of May through September only corresponding to seasonal bacteria limits) indicates the maximum daily TRC discharged has ranged from 0.01 mg/L to 0.1 mg/L and compliance with the daily maximum limitation 100% of the time during said reporting period.

- g. pH: The previous permitting action established, and this permitting action is carrying forward, a technology-based pH limit of 6.0 – 9.0 standard units, which is based on Department rule, 06-096 CMR Chapter 525(3)(III), and a minimum monitoring frequency requirement of once per day (1/Day), which is based on Department guidance for POTWs permitted to discharge between 0.5 and 1.5 MGD, and “grab” sample type for pH.

A review of the daily maximum data as reported on the Discharge Monitoring Reports submitted to the Department for the period January 2003 – December 2005 indicates the facility has been in compliance with the pH range limitation 100% of the time during said reporting period.

- h. Whole Effluent Toxicity (WET), Priority Pollutant, and Analytical Chemistry Testing: Maine law, 38 M.R.S.A., §414-A and §420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. Department rule, 06-096 CMR Chapter 530, *Surface Water Toxics Control Program* sets forth effluent monitoring requirements and procedures to establish safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected and narrative and numeric water quality criteria are met. Department rule 06-096 CMR Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, sets forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

WET, priority pollutant and analytical chemistry testing, as required by Chapter 530, is included in this permit in order to characterize the effluent. WET monitoring is required to assess and protect against impacts upon water quality and designated uses caused by the aggregate effect of the discharge on specific aquatic organisms. Acute WET tests are performed on invertebrate species mysid shrimp (*Mysidopsis bahia*); chronic WET tests are performed on sea urchin (*Arbacia punctulata*). Chemical-specific monitoring is required to assess the levels of individual toxic pollutants in the discharge, comparing each pollutant to acute, chronic, and human health water quality criteria. Priority pollutant testing refers to the

## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

analysis for levels of priority pollutants listed in Department rule 06-096 CMR Chapter 525 Section 4.VI. Analytical chemistry refers to a suite of chemical tests for ammonia-nitrogen, total aluminum, total cadmium, total chromium, total copper, total hardness (fresh water only), total lead, total nickel, total silver, total zinc, total arsenic, total cyanide and total residual chlorine.

This permit provides for reconsideration of effluent limits and monitoring schedules after evaluation of toxicity testing results. The monitoring schedule includes consideration of results currently on file, the nature of the wastewater, existing treatment, and receiving water characteristics.

Chapter 530 Section 2.B. categorizes dischargers subject to the toxics rule into one of four levels (Levels I through IV). Level II dischargers are those "having a chronic dilution factor of at least 20 but less than 100 to 1." The chronic dilution factor associated with the discharge from the Belfast facility is 33.9 to 1; thus, the facility is considered a Level II facility for purposes of toxics testing.

The previous permitting action established surveillance level WET testing (using the mysid shrimp, inland silverside, and sea urchin) at a minimum frequency of once per year, and screening level WET testing at a minimum frequency of twice per year. The previous permitting action established a daily maximum acute no observed effect level (A-NOEL) limit of 5.3% for the mysid shrimp based on a statistical evaluation of WET test data which indicated the discharge had a reasonable potential to exceed the acute ambient water quality threshold of 5.3% (mathematical inverse of the previous acute dilution factor).

The previous permitting action established chemical-specific testing at a minimum frequency of once per year for all five years of the term of the permit. These monitoring requirements were established pursuant to Department rule Chapter 530.5 ("the old toxics rule"), which was replaced by Chapter 530 ("the revised toxics rule") on October 9, 2005.

A review of the data on file with the Department for the City indicates that they have fulfilled the WET and chemical-specific testing requirements of the previous permit. See Attachment C of this Fact Sheet for a summary of the WET test results, and Attachment D of this Fact Sheet for a summary of chemical-specific test dates, copper and arsenic test results.

### WET Evaluation

Chapter 530 Section 3.E. states:

*For effluent monitoring data and the variability of the pollutant in the effluent, the Department shall apply the statistical approach in Section 3.3.2 and Table 3-2 of USEPA's "Technical Support Document for Water Quality-Based Toxics Control" (USEPA Publication 505/2-90-001, March, 1991, EPA, Office of Water, Washington, D.C.) to data to determine whether water-quality based effluent limits must be included in a waste*

**6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)**

*discharge license. Where it is determined through this approach that a discharge contains pollutants or WET at levels that have a reasonable potential to cause or contribute to an exceedence of water quality criteria, appropriate water quality-based limits must be established in any licensing action.*

On April 4, 2006, the Department conducted a statistical evaluation on the most recent 60 months of WET test results on file with the Department for the Belfast facility in accordance with the statistical approach outlined above. **The 4/4/06 statistical evaluation indicates the discharge from the Belfast Wastewater Treatment Facility does not exceed or have a reasonable potential to exceed the critical acute (5.6%) or chronic (2.9%) water quality thresholds for any of the WET species tested to date.** Therefore, this permitting action is eliminating the A-NOEL limit of 5.3% for the mysid shrimp and is not establishing numeric limitations for any other WET species.

Department rule, Chapter 530 Section 2.C.(1) specifies that “*test species for discharges to marine waters are Mysid shrimp, Mysidopsis bahia (acute only) and the sea urchin, Arbacia punctulata, (chronic only), or other organisms specified by the Department. All WET testing must be reported as a No Observed Effect Level.*” Therefore, this permitting action is eliminating the requirement to conduct WET testing on the inland silverside (*Menidia beryllina*).

Chapter 530 Section 2.D specifies WET, priority pollutant, and analytical chemistry test schedules for Level II dischargers as follows:

<b>Level II Dischargers</b>	<b>WET</b>	<b>Priority Pollutants</b>	<b>Analytical</b>
<b>Surveillance Level (first 4 years)</b>	1 per year	None Required	2 per year
<b>Screening Level (last year)</b>	2 per year	1 per year	4 per year

Department rule Chapter 530 Section 2.D.3.c states, “*dischargers in Level II may reduce surveillance testing to one WET or specific chemical series every other year provided that testing in the preceding 60 months does not indicate any reasonable potential for exceedence.*” Thus, the City qualifies for reduced surveillance level WET testing at the Belfast Wastewater Treatment Facility.

This permitting action is establishing reduced surveillance level WET testing at a minimum frequency of once every two years and screening level WET testing at a minimum frequency of twice per year. Surveillance and screening level tests shall be coordinated such that upon completion of the last required screening level test, WWT results are available for each of the four calendar quarters. In addition, screening level tests shall be conducted in the calendar period between January and June and the other test conducted six months later. See Special Conditions A.2 and A.3. of this permit for a tabular presentation of WET testing requirements.

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Department rule Chapter 530 Section 2.D.4. states, "*all dischargers having waived or reduced testing must file statements with the Department on or before December 31 of each year describing the following.*

- (a) *Changes in the number or types of non-domestic wastes contributed directly or indirectly to the wastewater treatment works that may increase the toxicity of the discharge;*
- (b) *Changes in the operation of the treatment works that may increase the toxicity of the discharge; and*
- (c) *Changes in industrial manufacturing processes contributing wastewater to the treatment works that may increase the toxicity of the discharge."*

This permitting action establishes Special Condition I, *Chapter 530 Certification*, pursuant to Chapter 530 Section 2.D.4. It is noted, however, that if future WET testing indicates the discharge exceeds critical water quality thresholds, this permit will be reopened in accordance with Special Condition N, *Reopening of Permit For Modification*, to establish effluent limitations and monitoring requirements as necessary.

### Priority Pollutant Evaluation

The previous permitting action established water quality-based daily maximum concentration and mass limits of 83 µg/L and 0.32 lbs./day, respectfully, for total copper based on a statistical evaluation of effluent data on file with the Department, which indicated that the discharge demonstrated a reasonable potential to exceed the acute AWQC for copper. The previous permitting action established a minimum monitoring frequency requirement of once per calendar quarter.

On April 4, 2006, the Department conducted a statistical evaluation on the most recent 60 months of chemical-specific tests results on file with the Department for the Belfast facility in accordance with the statistical approach outlined above. **The 4/4/06 statistical evaluation indicates the discharge from the Belfast Wastewater Treatment Facility has one test result of 39.3 µg/L which demonstrates a reasonable potential to exceed the critical acute ambient water quality criterion threshold (34.0 µg/L) for total copper. The evaluation indicates that the discharge does not exceed or have a reasonable potential to exceed the AWQC for any other parameters tested.**

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Department rule Chapter 530 Section 3 states, “the Department shall establish appropriate discharge prohibitions, effluent limits and monitoring requirements in waste discharge licenses if a discharge contains pollutants that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an ambient excursion in excess of a numeric or narrative water quality criteria or that may impair existing or designated uses.”

Therefore, this permitting action is revising the daily maximum water quality-based concentration and mass limits for total copper based on current AWQC and Chapter 530 requirements.

On October 9, 2005, a new Department rule, Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, became effective. The rule establishes ambient water quality criteria for toxic pollutants in surface waters of the State. The acute AWQC for copper was revised from 2.9 µg/L, which was the basis for the previous total copper limits, to 5.78 µg/L.

Department rule Chapter 530 Section 4.C. requires that the background concentration of specific chemicals must be included in all calculations based on a published list of default background concentrations for specific pollutants on a regional, watershed or statewide basis. For pollutants not listed by the Department, an assumed concentration of 10% of the applicable water quality criteria must be used in calculations. The Department has not published site-specific background copper values for the receiving water, the Atlantic Ocean at Belfast Harbor. Therefore, this permitting action assumes the default 10% of applicable AWQC in calculating effluent limitations for copper, which is illustrated in the calculations below. Additionally, Department rule Chapter 530 Section 4.E. requires the Department to hold a portion of the total assimilative capacity for toxic pollutants in an unallocated reserve to allow for new or changed discharges and non-point source contributions. The water quality reserve must not be less than 15% of the total assimilative quantity. The Department has not assigned specific allocations for dischargers to Belfast Harbor. Therefore, this permitting action reserves the default value of 15% of the total assimilative capacity in calculating effluent limitations for copper, which is illustrated in the calculations below.

### Total Copper

End-of-pipe (EOP), water quality-based, daily maximum concentration and mass limits for total copper may be calculated as follows:

$$\text{EOP Concentration Threshold} = (\text{Dilution Factor})[(0.75)(\text{criterion})] + (0.25)(\text{criterion})$$

$$\begin{aligned} \text{EOP Daily Maximum Concentration Threshold} = \\ (17.7)[(0.75)(5.78 \mu\text{g/L})] + (0.25)(5.78 \mu\text{g/L}) = 78.2 \mu\text{g/L} \end{aligned}$$

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

EOP Copper Mass Limit = (EOP Conc. Threshold)(8.34 lbs./gallon)(design flow, MGD)

**Daily Max. EOP Copper Mass Limit =  $\frac{(78.2 \mu\text{g/L})(8.34 \text{ lbs./gallon})(0.9 \text{ MGD})}{1000 \mu\text{g/mg}} = 0.59 \text{ lbs./day}$**

Department rule Chapter 530.3.D(1) states, “for specific chemicals, effluent limits must be expressed in total quantity that may be discharged and in effluent concentration. In establishing concentration, the Department may increase allowable values to reflect actual flows that are lower than permitted flows and/or provide opportunities for flow reductions and pollution prevention provided water quality criteria are not exceeded.” As not to penalize the permittee for operating at flows less than the permitted flow, the Department is establishing concentration limits based on a factor of 1.5. Therefore, the daily maximum copper concentration limit may be calculated as follows:

EOP Copper Concentration Limit = (EOP Concentration Threshold)(1.5)

**Daily Maximum EOP Copper Concentration Limit =  $(78.2 \mu\text{g/L})(1.5) = 117 \mu\text{g/L}$**

This permitting action is revising the minimum monitoring frequency requirement from once per quarter to twice per year (2/Year) for total copper consistent with the surveillance level monitoring requirements set forth in Chapter 530 for analytical chemistry and in consideration that the Department’s statistical analysis which indicates only one copper test result (39.3  $\mu\text{g/L}$ ) was above the reasonable potential threshold of 34.0  $\mu\text{g/L}$  within the most recent 60 month period.

In accordance with Department rule Chapter 530 Section 2.D.3.c (reduced testing), this permitting action is establishing reduced surveillance level (first four years of permit) analytical chemistry testing at a minimum frequency of one test every two years, and screening level (last year of permit) testing frequency of four per year prescribed by Chapter 530.

This permitting action is establishing screening level priority pollutant testing at a minimum frequency of once per year.

## 7. ANTIDEGRADATION

Maine law, 38 M.R.S.A. §464(4)(F) contains what is referred to as the State's antidegradation policy. The Department has determined that the action of eliminating the numeric limit for mysid shrimp and revising the daily maximum concentration and mass limits for total copper to limits that are less stringent than those established in the previous permit is appropriate and justified at this time and will not cause or contribute to the failure of the receiving waterbody to meet the standards of its assigned water quality classification. Elimination of the mysid shrimp limit is based on a review of the most recent 60 months of effluent data on file with the Department for this facility, which indicates that the discharge does not exceed or demonstrate a reasonable potential to exceed the ambient water quality thresholds for the mysid shrimp. The revised copper limits are based on new requirements of Department rule chapter 530 and on revised ambient water quality criteria for copper.

## 8. COMBINED SEWER OVERFLOWS

This permit does not contain effluent limitations on the individual CSO outfalls listed in the table below.

<u>Outfall #</u>	<u>Outfall Location</u>	<u>Receiving Water and Class</u>
002	Miller Street CSO	Belfast Harbor, SB
003	Condon Street CSO	Belfast Harbor, SB

Department regulation Chapter 570, "Combined Sewer Overflow Abatement," states that for discharges from overflows from combined municipal storm and sanitary sewer systems, the requirement of "best practicable treatment" specified in Maine law, 38 M.R.S.A., section 414-A(1)(D) may be met by agreement with the discharger, as a condition of its permit, through development of a plan within a time period specified by the Department. The City submitted to the Department a CSO Master Plan entitled, *Sewer System Master Plan for CSO Abatement City of Belfast, ME, January 2000*, prepared by Olver Associates, and the updated plan entitled *Updated Master Plan for CSO Abatement, City of Belfast, Maine, September 2005*, prepared by Olver Associates. The City has submitted a revised Master Plan to the Department, which was approved by the Department on April 26, 2006.

The City has been actively implementing the recommendations of the Master Plan and to date has significantly reduced the volume of untreated combined sewer overflows to the receiving water. Special Condition M, *Conditions For Combined Sewer Overflows*, of this permit contains a schedule of compliance for items in the most current up-to-date abatement plan which must be completed.

The Department acknowledges that the elimination of the two remaining CSOs in the collection system is a costly, long-term project. As the Belfast treatment facility and the sewer collection system are upgraded and maintained in accordance to the CSO Master Plan and Nine Minimum Controls, there should be reductions in the frequency and volume of CSO activities and, over time, improvement in the quality of the wastewater discharged to the receiving waters.

## 9. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As permitted, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the water body to meet standards for Class SB classification.

## 10. PUBLIC COMMENTS

Public notice of this application was made in *The Republican Journal*, *The Waldo Independent*, and *The Village Soup Citizen* newspapers on March 9, 2006. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

## 11. DEPARTMENT CONTACTS

Additional information concerning this permitting action may be obtained from, and written comments sent to:

William F. Hinkel  
Division of Water Quality Management  
Bureau of Land & Water Quality  
Department of Environmental Protection  
17 State House Station  
Augusta, Maine 04333-0017 Telephone: (207) 287-7659 Fax: (207) 287-7826  
e-mail: [bill.hinkel@maine.gov](mailto:bill.hinkel@maine.gov)

## 12. RESPONSE TO COMMENTS

During the period of April 19, 2006 through May 18, 2006, the Department solicited comments on the proposed draft Maine Pollutant Discharge Elimination System Permit to be issued to the City of Belfast for the proposed discharges. The Department received no significant comments on the proposed draft permit; therefore, a response to comments was not prepared.

# **ATTACHMENT A**



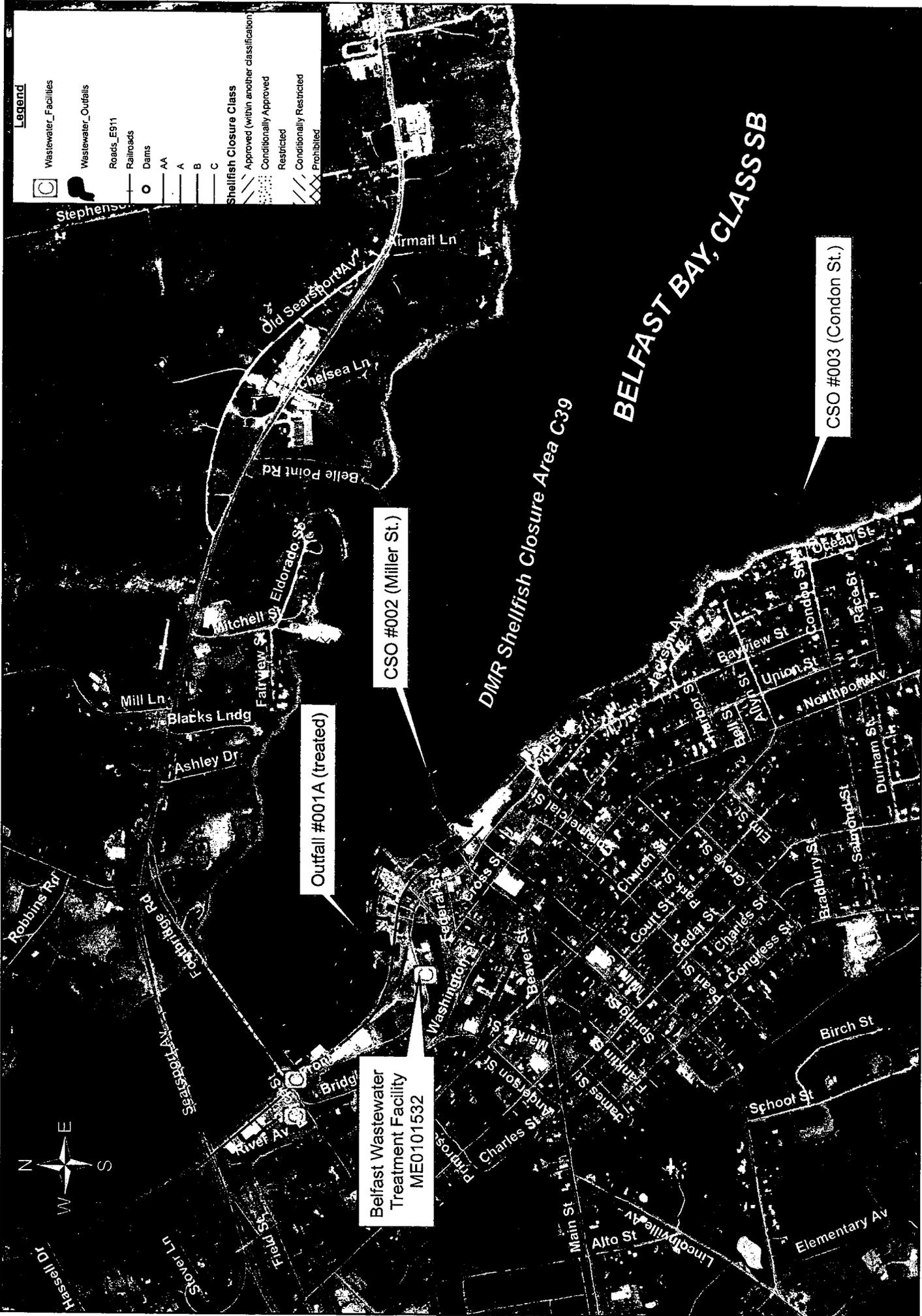


**Legend**

- Wastewater\_Facilities
- Wastewater\_Outfalls
- Roads\_E911
- Railroads
- Dams
- AA
- A
- B
- C

**Shellfish Closure Class**

- Approved (within another classification)
- Conditionally Approved
- Restricted
- Conditionally Restricted
- Prohibited



Belfast Wastewater Treatment Facility  
ME0101532

Outfall #001A (treated)

CSO #002 (Miller St.)

CSO #003 (Condon St.)

DMR Shellfish Closure Area C39

BELFAST BAY, CLASS SB

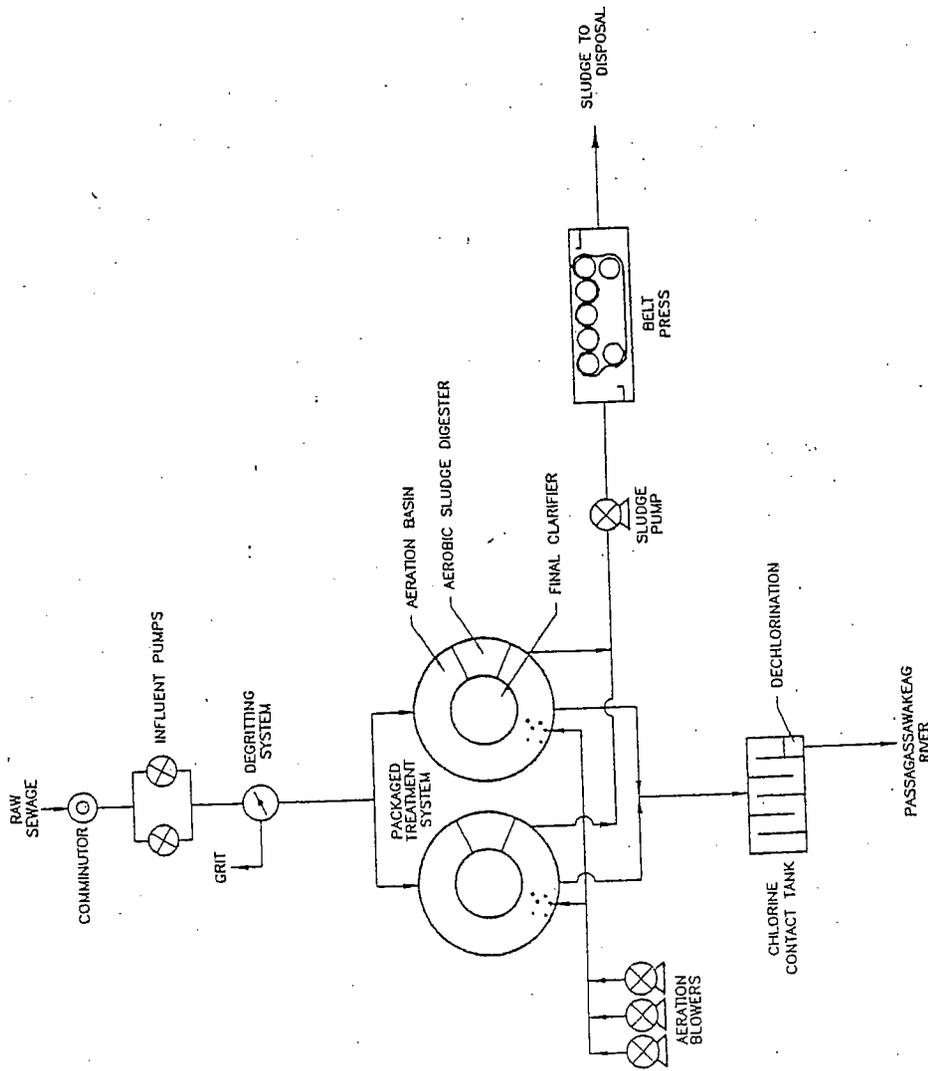
Map created by Maine DEP  
February 22, 2006

**Belfast Wastewater Treatment Facility at Belfast, Maine**

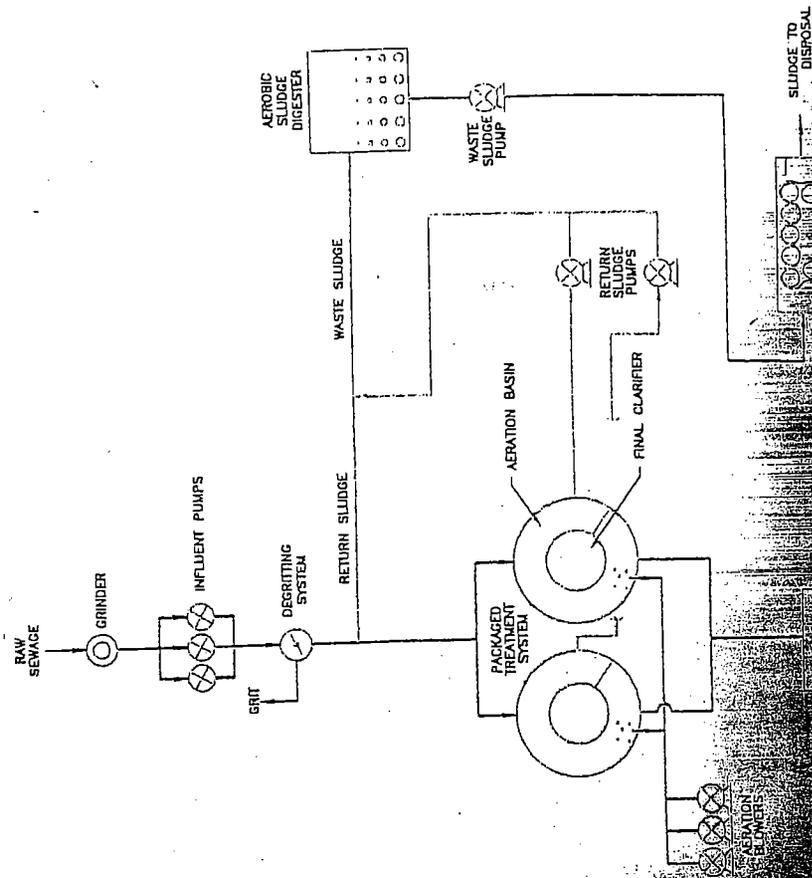


# **ATTACHMENT B**

# BELFAST'S PRESENT TREATMENT FACILITY



# BELFAST'S UPGRADED TREATMENT FACILITY



# **ATTACHMENT C**

Species	Test	Test Result %	Sample Date
SILVER SIDE	C_NOEL	100	09/12/1999
SILVER SIDE	LC50	>100	09/12/1999
MYSID SHRIMP	A_NOEL	100	07/30/2000
MYSID SHRIMP	LC50	>100	07/30/2000
SEA URCHIN	C_NOEL	100	07/30/2000
SILVER SIDE	A_NOEL	100	07/30/2000
SILVER SIDE	C_NOEL	100	07/30/2000
SILVER SIDE	LC50	>100	07/30/2000
MYSID SHRIMP	A_NOEL	100	07/22/2001
MYSID SHRIMP	LC50	>100	07/22/2001
SEA URCHIN	C_NOEL	100	07/22/2001
SILVER SIDE	A_NOEL	100	07/22/2001
SILVER SIDE	C_NOEL	100	07/22/2001
SILVER SIDE	LC50	>100	07/22/2001
MYSID SHRIMP	A_NOEL	100	07/28/2002
MYSID SHRIMP	LC50	>100	07/28/2002
SEA URCHIN	C_NOEL	100	07/28/2002
SILVER SIDE	A_NOEL	100	07/28/2002
SILVER SIDE	C_NOEL	100	07/28/2002
SILVER SIDE	LC50	>100	07/28/2002
MYSID SHRIMP	A_NOEL	50	07/13/2003
MYSID SHRIMP	LC50	>100	07/13/2003
SEA URCHIN	C_NOEL	100	07/13/2003
SILVER SIDE	A_NOEL	100	07/13/2003
SILVER SIDE	C_NOEL	100	07/13/2003
SILVER SIDE	LC50	>100	07/13/2003
MYSID SHRIMP	A_NOEL	100	07/18/2004
MYSID SHRIMP	LC50	>100	07/18/2004
SEA URCHIN	C_NOEL	100	07/18/2004
SILVER SIDE	A_NOEL	100	07/18/2004
SILVER SIDE	C_NOEL	100	07/18/2004
SILVER SIDE	LC50	>100	07/18/2004
MYSID SHRIMP	A_NOEL	100	07/17/2005
MYSID SHRIMP	LC50	>100	07/17/2005
SEA URCHIN	C_NOEL	100	07/17/2005
SILVER SIDE	A_NOEL	100	07/17/2005
SILVER SIDE	C_NOEL	100	07/17/2005
SILVER SIDE	LC50	>100	07/17/2005

# **ATTACHMENT D**

---

Sample Date: 07/22/2001  
Plant flows not provided

Total Tests: 128  
Missing Compounds: 6  
Tests With High DL: 0  
M = 0 V = 0 A = 0  
BN = 0 P = 0 other = 0

---

Sample Date: 08/01/2002  
Plant flows not provided

Total Tests: 124  
Missing Compounds: 1  
Tests With High DL: 0  
M = 0 V = 0 A = 0  
BN = 0 P = 0 other = 0

---

Sample Date: 07/13/2003  
Plant flows not provided

Total Tests: 132  
Missing Compounds: 1  
Tests With High DL: 0  
M = 0 V = 0 A = 0  
BN = 0 P = 0 other = 0

---

Sample Date: 07/18/2004  
Plant flows not provided

Total Tests: 131  
Missing Compounds: 1  
Tests With High DL: 0  
M = 0 V = 0 A = 0  
BN = 0 P = 0 other = 0

---

Sample Date: 07/17/2005  
Plant flows not provided

Total Tests: 132  
Missing Compounds: 0  
Tests With High DL: 0  
M = 0 V = 0 A = 0  
BN = 0 P = 0 other = 0

---

PP Data for "Hits" Only

BELFAST

BELFAST HARBOR

ARSENIC  
MDL = 5 ug/l

Conc, ug/l	MDL	Sample Date	Date Entered
1.000000	OK	07/13/2003	10/15/2003
< 1.000000	OK	07/22/2001	11/20/2001
< 1.000000	OK	08/01/2002	11/04/2002
< 1.000000	OK	07/18/2004	09/21/2004
< 1.000000	OK	07/17/2005	10/25/2005

BROMOFORM  
MDL = 5.0 ug/l

Conc, ug/l	MDL	Sample Date	Date Entered
7.000000	OK	07/13/2003	10/15/2003
15.000000	OK	07/22/2001	11/20/2001
< 2.000000	OK	08/01/2002	11/04/2002
< 2.000000	OK	07/18/2004	09/21/2004
< 2.000000	OK	07/17/2005	10/25/2005

CHLORODIBROMOMETHANE  
MDL = 3.0 ug/l

Conc, ug/l	MDL	Sample Date	Date Entered
2.000000	OK	07/17/2005	10/25/2005
3.000000	OK	08/01/2002	11/04/2002
3.000000	OK	07/13/2003	10/15/2003
3.000000	OK	07/18/2004	09/21/2004
4.000000	OK	08/01/2002	11/04/2002
7.000000	OK	07/13/2003	10/15/2003
8.000000	OK	07/22/2001	11/20/2001
< 2.000000	OK	07/22/2001	11/20/2001

CHLOROFORM  
MDL = 5.0 ug/l

Conc, ug/l	MDL	Sample Date	Date Entered
3.000000	OK	08/01/2002	11/04/2002
< 2.000000	OK	07/22/2001	11/20/2001
< 2.000000	OK	07/13/2003	10/15/2003
< 2.000000	OK	07/18/2004	09/21/2004
< 2.000000	OK	07/17/2005	10/25/2005

COPPER  
DL = 3 ug/l

Conc, ug/l	MDL	Sample Date	Date Entered
16.400000	OK	07/13/2003	10/15/2003
18.300000	OK	07/22/2001	11/06/2001
24.600000	OK	07/18/2004	09/21/2004
28.900000	OK	08/01/2002	11/04/2002
39.300000	OK	07/17/2005	10/21/2005

DICHLOROBROMOMETHANE  
DL = 3.0 ug/l

Conc, ug/l	MDL	Sample Date	Date Entered
2.000000	OK	07/22/2001	11/20/2001
< 2.000000	OK	08/01/2002	11/04/2002
< 2.000000	OK	07/13/2003	10/15/2003
< 2.000000	OK	07/18/2004	09/21/2004
< 2.000000	OK	07/17/2005	10/25/2005

